1096-03-2415 **Jef f Lobe***, Department of Mathematics, University of North Texas, Denton, TX 76203, and **Devon Henkis** and **Steve Jackson**. *The finite Steinhaus problem.* Preliminary report.

The finite Steinhaus problem asks whether every finite set $A \subseteq \mathbb{R}^2$ with $|A| = n > 1$ there cannot exist a set $S \subseteq \mathbb{R}^2$ such that $|\pi(A) \cap S| = 1$ for every isometric copy $\pi(A)$ of A. It is easy to see that holds for $n = 2, 3$ and a recent theorem of Xuan (extending results of Miller-Weiss and Gao) shows the result for $n = 4$. We make some connections between this problem and certain algebraic concepts, and show the result for $n = 5, 7$. (Received September 17, 2013)